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Patient-reported recall of smoking cessation interventions from a health professional

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Abstract

Objective—To determine the prevalence and characteristics of current cigarette smokers who report receiving health care provider interventions (‘5A’s’: ask, advise, assess, assist, arrange) for smoking cessation.

Methods—Data came from the 2009–2010 National Adult Tobacco Survey, a telephone survey of United States adults aged ≥18 years. Among current cigarette smokers who reported visiting a health professional in the past year (n = 16,542), estimates were calculated overall and by sex, age, race/ethnicity, education, income, health insurance coverage, and sexual orientation.

Results—Among smokers who visited a health professional (75.2%), 87.9% were asked if they used tobacco, 65.8% were advised to quit, and 42.6% were asked if they wanted to quit. Among those wanting to quit, 78.2% were offered assistance and 17.5% had follow-up arranged. Receipt of the ‘ask’ component was lower among males and uninsured individuals. Receipt of the ‘advise’ and ‘assess’ components was lower among those aged 18–24 and uninsured individuals. Receipt of the ‘assist ’ component was lower among non-Hispanic blacks. No differences were observed for the ‘arrange’ component.

Conclusions—Many current smokers report receiving health care provider interventions for smoking cessation. Continued efforts to educate, encourage, and support all health professionals to provide effective, comprehensive tobacco cessation interventions to their patients may be beneficial.

Keywords

Tobacco use cessation; Smoking cessation; Counseling; Adult; Questionnaires

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Conflict of interest statement

The authors have no conflicts of interest to report.

Introduction

Health professionals play an important role in educating their patients about the health risks of tobacco use and in providing effective cessation interventions (Fiore et al., 2000, 2008). Most smokers want to quit, health professionals have frequent contact and high credibility with smokers, and brief clinical interventions are effective in motivating and assisting tobacco users to quit (CDC, 2011a; Fiore et al., 2000, 2008).

The U.S. Public Health Service Clinical Practice Guideline recommends the "5A" model for health professionals to help patients quit tobacco use (Fiore et al., 2000, 2008). The approach encourages health professionals to *ask* patients if they use tobacco, *advise* them to quit, and *assess* their willingness to quit. If the patient is willing to make a quit attempt, the clinician should *assist* them by offering medication and providing or referring for counseling or additional treatment, and *arrange* for follow-up contact to prevent relapse. Considerable effort has been expended to integrate the 5A model into clinical practice through medical education, health care system changes, improved counseling and medication treatments, and health plan benefit design (Curry et al., 2008; Fiore et al., 2008).

This study analyzed data from the National Adult Tobacco Survey (NATS) to determine the prevalence and characteristics of patient-reported receipt of the 5A's among U.S. adult current cigarette smokers who visited a health professional within the past year.

Methods

Sample

The 2009–2010 NATS was a stratified, national landline and cellular telephone survey of non-institutionalized adults aged ≥18 years residing in the 50 U.S. states and D.C. (King et al., 2012). During October 2009–February 2010, 118,581 interviews were completed (n = 110,634 landline; n = 7947 cell). The response rate was 37.6% (landline = 40.4%; cell = 24.9%). This study was restricted to current cigarette smokers (n = 16,542).

Measures

Current smoking—Current smokers were defined as those who reported smoking ≥100 cigarettes in their lifetime and "everyday" or "some days" at the time of survey.

Receipt of 5 A's—Respondents who reported visiting a doctor, dentist, nurse, or other health professional within the past 12 months were asked whether a health professional: asked if they smoked cigarettes or used any other tobacco products (*Ask*); advised them to quit using tobacco (*Advise*); and asked if they wanted to try to quit using tobacco (*Assess*). Respondents who told the health professional they wanted to quit were asked whether the health professional: offered any assistance, information, or additional advice to help them quit (*Assist*); and, scheduled follow-up contact related to their quit attempt (*Arrange*). In addition to receipt of any assistance, those who wanted to quit were asked about three specific types of assistance: (1) provision of booklets, videos, websites, or other information to help them quit; (2) referral to a telephone quitline, class, program, or counseling; (3)

recommendation or prescription for a nicotine patch, nicotine gum, lozenges, nasal spray, inhaler, or pills such as Wellbutrin, Zyban, bupropion, Chantix, or varenicline.

Respondent characteristics—Characteristics included: sex, age, race/ethnicity, education, annual household income, health insurance coverage, and sexual orientation.

Analysis

Data were analyzed using SAS-callable SUDAAN 9.2 (RTI, Research Triangle Park, NC) and weighted to adjust for undercoverage and nonresponse. Differences were considered statistically significant if 95% confidence intervals did not overlap.

Results

Among current smokers, 75.2% (n = 13,371) reported visiting a health professional within the past 12 months. Among these individuals, 87.9% recalled being asked if they smoked cigarettes (Table 1). The prevalence of being asked about smoking was lower among respondents who were male, aged 18–24, uninsured, and those making $20,000–$49,999.

Among current smokers who visited a health professional, 65.8% were advised to quit. Receipt of advice to quit was lower among respondents aged 18–24 and uninsured.

Among current smokers who visited a health professional, 42.6% were asked about their desire to quit. Among these individuals, 67.6% indicated they wanted to quit. The prevalence of being asked about desire to quit was lower among those aged 18–24 and 25–44, uninsured, and with unspecified income.

Among current smokers asked about their desire to quit who indicated they wanted to quit (n = 3760), 78.2% were offered any assistance. Receipt of assistance was lower among non-Hispanic blacks and those making <$20,000. In total, 50.6% were provided with booklets, videos, websites, or other information, 37.5% were referred to a quitline, class, program, or counseling, and 57.8% were recommended or prescribed medication; 23.1% received all 3 of these forms of assistance, 49.5% received ≥2, and 73.0% received ≥1.

Among current smokers asked about their desire to quit who indicated they wanted to quit, 17.5% indicated follow-up contact was arranged; no sociodemographic differences were observed.

Discussion

The provision of tobacco cessation interventions by health professionals is effective across a broad range of populations, and its effectiveness increases with treatment intensity (Fiore et al., 2000, 2008). Even brief clinician advice significantly increases quit rates (Fiore et al., 2008). However, given the high preventable morbidity and mortality associated with smoking (USDHHS, 2004), a comprehensive treatment plan, including follow-up, is essential (Boyle and Solberg, 2004; Curry et al., 2008).

This study found strong provider compliance with the ask (87.9%) and advise (65.8%) components of the 5A model, but moderate compliance with the assess component (42.6%). This finding is consistent with previous studies of patients (Chase et al., 2007; Quinn et al., 2005, 2009) and physicians (AAMC, 2007). A 1999–2000 survey of participants in nine health maintenance organizations (HMO) found that 90% of smokers were asked about smoking and 71% were advised to quit, while 56% were assessed for their willingness to quit (Quinn et al., 2005). Similarly, a 2003 survey of Medicaid-enrolled smokers found that 87% were asked about smoking and 65% were advised to quit, whereas 51% received the assess component (Chase et al., 2007). However, receipt of the assist and arrange components in this study were higher than previous studies of both HMO and Medicaid-enrolled smokers (Chase et al., 2007; Kruger et al., 2012; Quinn et al., 2005). These variations could be due to differences in survey methodology, improved delivery of these components, or the NATS questionnaire, which did not allow for stratification by clinician type or assessment of the assist and arrange components among all smokers.

The provision of tobacco cessation interventions may be enhanced through recent policy and system change efforts. For example, the Patient Protection and Affordable Care Act of 2010, as amended by the Healthcare and Education Reconciliation Act of 2010, will increase public and private insurance coverage of tobacco cessation treatment (UWCTRI, 2010). Other national initiatives, including incentives for the adoption of electronic health records and the implementation of voluntary Joint Commission hospital performance measures, also have the potential to change health care systems in ways that promote provider cessation interventions (Fiore et al., 2012; Land et al., 2012).

This study is subject to five limitations. First, receipt of cessation support was patient-reported and not confirmed by clinician reports. Clinicians generally report higher rates of tobacco cessation interventions compared to both patients and electronic medical records (Conroy et al., 2005). Second, questionnaire wording did not allow for the determination of estimates by clinician type. Third, only 42.6% of respondents were asked if they wanted to quit, questionnaire skip patterns prevented the determination of the assist component among smokers who did not want to quit, and “assistance” included a large scope of interventions. Thus, the prevalence of assistance (78.2%) is likely overestimated. Fourth, the study was limited to current smokers; estimates may be higher if former smokers were included. Finally, the response rate was 37.6%. While lower response rates can increase the potential for bias (Delnevo and Bauer, 2009), this rate is comparable to other national health surveys (CDC, 2011b; SAMHSA, 2011).

Conclusion

This study reveals that most current cigarette smokers who visited a health professional were asked about their tobacco use, and approximately two-thirds were advised to quit. However, few who wanted to quit received every component of the 5A model. This study suggests that continued efforts to educate, encourage, and support all health professionals to provide effective, comprehensive tobacco cessation interventions to their patients may be beneficial.

Acknowledgments

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

Abbreviations

HMO	Health Management Organization
NATS	National Adult Tobacco Survey

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Table 1

Smoking cessation interventions received by current cigarette smokers who visited a health professional within the past 12 months — NATS, 2009–2010.

Characteristic	Ask	Advise	Assess	Assist[a]				Arrange[a]
	Asked about smoking	Advised to quit smoking	Asked about desire to quit	Offered any assistance	Provided information	Referred to quitline, class, or counseling	Recommended or prescribed medication	Scheduled follow-up
	(n = 13.327)	(n = 13,324)	(n = 13,191)	(n = 3760)	(n = 3750)	(n = 3740)	(n = 3744)	(n = 3749)
	% [95% CI]	% [95% CI]	% [95% CI]	% [95% CI]	% [95% CI]	% [95% CI]	% [95% CI]	% [95% CI]
Sex								
Male	85.5 [83.4–87.3]	63.9 [61.4–66.4]	40.3 [37.9–42.9]	77.9 [73.2–82.0]	49.9 [44.8–55.0]	37.6 [32.8–42.6]	57.7 [52.6–62.6]	16.0 [12.1–20.8]
Female	90.5 [89.3–91.7]	68.0 [65.9–70.0]	44.9 [42.8–47.1]	78.5 [75.2–81.4]	51.2 [47.4–55.1]	37.4 [33.7–41.2]	57.8 [54.1–61.5]	18.8 [15.6–22.4]
Age (years)								
18–24	83.8 [79.5–87.3]	51.8 [46.8–56.9]	27.7 [23.7–32.1]	75.6 [65.4–83.5]	52.2 [41.0–63.2]	41.2 [30.5–52.8]	46.8 [35.8–58.2]	20.1 [11.6–32.5]
25–44	88.2 [86.0–90.0]	66.1 [63.3–68.8]	41.9 [39.2–44.7]	79.1 [74.6–83.0]	53.1 [47.9–58.2]	42.4 [37.4–47.6]	56.1 [51.0–61.1]	16.9 [13.3–21.3]
45–64	89.7 [88.2–91.1]	70.6 [68.4–72.6]	48.6 [46.2–51.0]	77.2 [72.7–81.1]	49.0–53.3] [44.8	33.4 [29.6–37.3]	59.8 [55.4–64.1]	15.1 [12.6–18.0]
≥65	86.8 [82.0–90.5]	71.8 [66.8–76.2]	48.8 [43.4–54.2]	81.3 [73.9–86.9]	42.8 [31.7–54.6]	28.7 [20.1–39.1]	68.2 [58.3–76.7]	28.0 [14.7–46.7]
Race/ethnicity								
White, non-Hispanic	87.9 [86.6–89.1]	66.6 [64.9–68.3]	42.5 [40.7–44.3]	81.8 [79.2–84.0]	52.6 [49.2–56.0]	37.2 [33.8–40.6]	61.9 [58.7–65.1]	16.8 [14.3–19.7]
Black, non-Hispanic	88.3 [84.2–91.4]	64.5 [59.2–69.4]	43.8 [38.7–49.0]	71.3 [62.5–78.7]	51.1 [42.7–59.4]	42.3 [34.2–50.8]	44.9 [36.8–53.3]	16.7 [10.8–24.8]
Asian, non-Hispanic	81.8 [64.6–91.7]	64.3 [47.3–78.4]	40.8 [25.3–58.5]	87.7 [62.4–96.8]	60.6 [34.5–81.9]	*b*	36.2 [15.7–63.4]	*b*
Other, non-Hispanic	91.1 [86.3–94.3]	66.1 [59.7–72.0]	47.8 [41.4–54.3]	68.8 [55.5–79.6]	46.7 [35.3–58.3]	37.7 [27.4–49.3]	53.6 [41.6–65.2]	15.8 [10.1–23.9]
Hispanic	86.1 [78.6–91.2]	60.7 [52.2–68.6]	39.3 [31.7–47.5]	65.6 [47.3–80.2]	32.9 [20.4–48.3]	33.9 [20.9–49.9]	49.0 [32.0–66.3]	27.9 [13.2–49.5]
Education								
0–12 years (no diploma)	87.9 [84.1–91.0]	68.3 [63.5–72.8]	45.8 [41.1–50.6]	73.7 [66.0–80.1]	39.3 [31.7–47.4]	30.0 [23.0–37.9]	59.0 [50.9–66.6]	20.9 [13.7–30.6]
GED	87.1 [80.2–91.8]	58.8 [50.7–66.4]	35.7 [29.0–42.9]	82.2 [70.6–89.8]	51.2 [37.3–64.9]	52.2 [38.3–65.8]	56.8 [42.2–70.3]	14.7 [8.1–25.2]
High school graduate	87.0 [84.7–88.9]	64.4 [61.4–67.3]	41.6 [38.7–44.5]	79.9 [75.0–84.0]	56.1 [50.5–61.6]	40.3 [34.8–46.1]	56.5 [50.9–62.0]	17.9 [13.8–22.8]
Some college (no degree)	88.0 [85.5–90.2]	66.2 [62.7–69.6]	41.9 [38.5–45.4]	76.0 [69.6–81.3]	51.3 [45.0–57.5]	38.2 [32.5–44.4]	56.3 [49.9–62.5]	15.6–20.1] [11.9
Associate degree	90.1 [87.6–92.2]	69.5 [66.0–72.7]	45.1 [41.4–48.7]	83.0 [76.6–88.0]	54.4 [47.6–61.1]	41.3 [34.9–48.0]	59.7 [52.8–66.2]	16.0 [12.2–20.7]
Undergraduate degree	87.7 [85.1–90.0]	63.2 [59.1–67.1]	39.8 [35.8–43.9]	78.3 [70.6–84.5]	57.0 [48.9–64.9]	35.5 [28.1–43.8]	55.8 [47.4–63.9]	16.7 [10.7–25.0]
Graduate degree	86.9 [82.1–90.6]	62.1 [56.2–67.7]	39.1 [33.5–45.1]	80.9 [65.9–90.2]	51.5 [39.2–63.6]	34.3 [24.1–46.2]	62.4 [49.3–73.8]	12.8 [6.8–22.9]

Characteristic	Ask	Advise	Assess	Assist[a]				Arrange[a]
	Asked about smoking	Advised to quit smoking	Asked about desire to quit	Offered any assistance	Provided information	Referred to quitline, class, or counseling	Recommended or prescribed medication	Scheduled follow-up
	(n = 13.327)	(n = 13,324)	(n = 13,191)	(n = 3760)	(n = 3750)	(n = 3740)	(n = 3744)	(n = 3749)
	% [95% CI]	% [95% CI]	% [95% CI]	% [95% CI]	% [95% CI]	% [95% CI]	% [95% CI]	% [95% CI]
Yearly household income								
<$20,000	91.3 [89.0–93.2]	71.0 [67.0–74.8]	46.4 [42.5–50.4]	70.2 [64.2–75.6]	42.2 [36.2–48.3]	34.5 [28.8–40.8]	50.6 [44.4–56.7]	18.9 [14.3–24.5]
$20,000–$49,999	86.6 [84.3–88.6]	65.0 [62.2–67.7]	43.0 [40.3–45.8]	78.1 [72.9–82.6]	51.1 [45.6–56.7]	36.3 [31.4–41.5]	57.5 [52.0–62.8]	18.5 [13.8–24.5]
$50,000–$99,999	88.6 [86.4–90.5]	66.0 [62.8–68.9]	42.6 [39.5–45.8]	83.6 [79.3–87.2]	55.6 [49.7–61.4]	39.4 [33.5–45.5]	63.7 [58.1–69.0]	16.5 [12.6–21.3]
≥$100,000	86.0 [80.8–89.9]	62.4 [56.8–67.6]	39.0 [33.9–44.3]	80.6 [70.0–88.1]	53.9 [43.6–63.9]	38.9 [29.1–49.7]	57.8 [47.1–67.8]	18.1 [11.0–28.3]
Unspecified	86.3 [81.4–90.1]	63.1 [57.2–68.7]	35.4 [30.0–41.2]	80.0 [67.7–88.5]	54.0 [41.6–66.0]	45.8 [33.7–58.5]	58.8 [46.2–70.3]	*b*
Health insurance coverage								
Yes	89.2 [87.8–90.5]	68.3 [66.4–70.2]	44.7 [42.7–46.6]	79.3 [76.0–82.2]	49.9 [46.3–53.4]	36.5 [33.2–39.9]	59.4 [55.9–62.9]	18.8 [15.7–22.2]
No	84.8 [82.3–87.1]	60.5 [57.2–63.6]	38.0 [34.9–41.2]	75.3 [69.8–80.1]	52.5 [46.1–58.8]	40.3 [33.9–47.0]	53.5 [47.1–59.7]	13.7 [9.6–19.3]
Sexual orientation								
Heterosexual/Straight	87.9 [86.6–89.1]	66.1 [64.4–67.8]	42.8 [41.1–44.6]	78.3 [75.6–80.8]	50.7 [47.5–54.0]	37.3 [34.2–40.4]	57.3 [54.1–60.5]	17.2 [14.5–20.2]
LGBT	88.3 [81.9–92.6]	67.4 [59.1–74.7]	36.6 [28.7–45.4]	73.2 [46.3–89.6]	45.1 [28.4–63.0]	34.6 [20.8–51.6]	60.9 [39.2–79.0]	19.5 [10.0–34.6]
Unspecified	89.5 [84.1–93.2]	62.5 [53.5–70.7]	44.5 [35.9–53.4]	76.1 [57.8–88.1]	55.8 [39.1–71.3]	49.5 [33.1–66.0]	60.0 [43.3–74.7]	22.0 [10.9–39.2]
Total	87.9 [86.7–89.0]	65.8 [64.2–67.5]	42.6 [40.9–44.2]	78.2 [75.5–80.7]	50.6 [47.5–53.7]	37.5 [34.5–40.5]	57.8 [54.7–60.8]	17.5 [15.0–20.4]

Note: among current cigarette smokers who reported seeing a doctor, dentist, nurse or other health professional within the past 12 months.

Abbreviations: CI = confidence interval; GED = graduate equivalency degree; LGBT = lesbian, gay, bisexual, or transgender.

[a] Among respondents who were asked about their desire to quit smoking (Assess) and responded that they wanted to quit smoking.

[b] Relative standard error ≥ 40%.